Improving GOES-R Cloud and Precipitation Products Associated with DCSs using NEXRAD Radar Network over Continental USA

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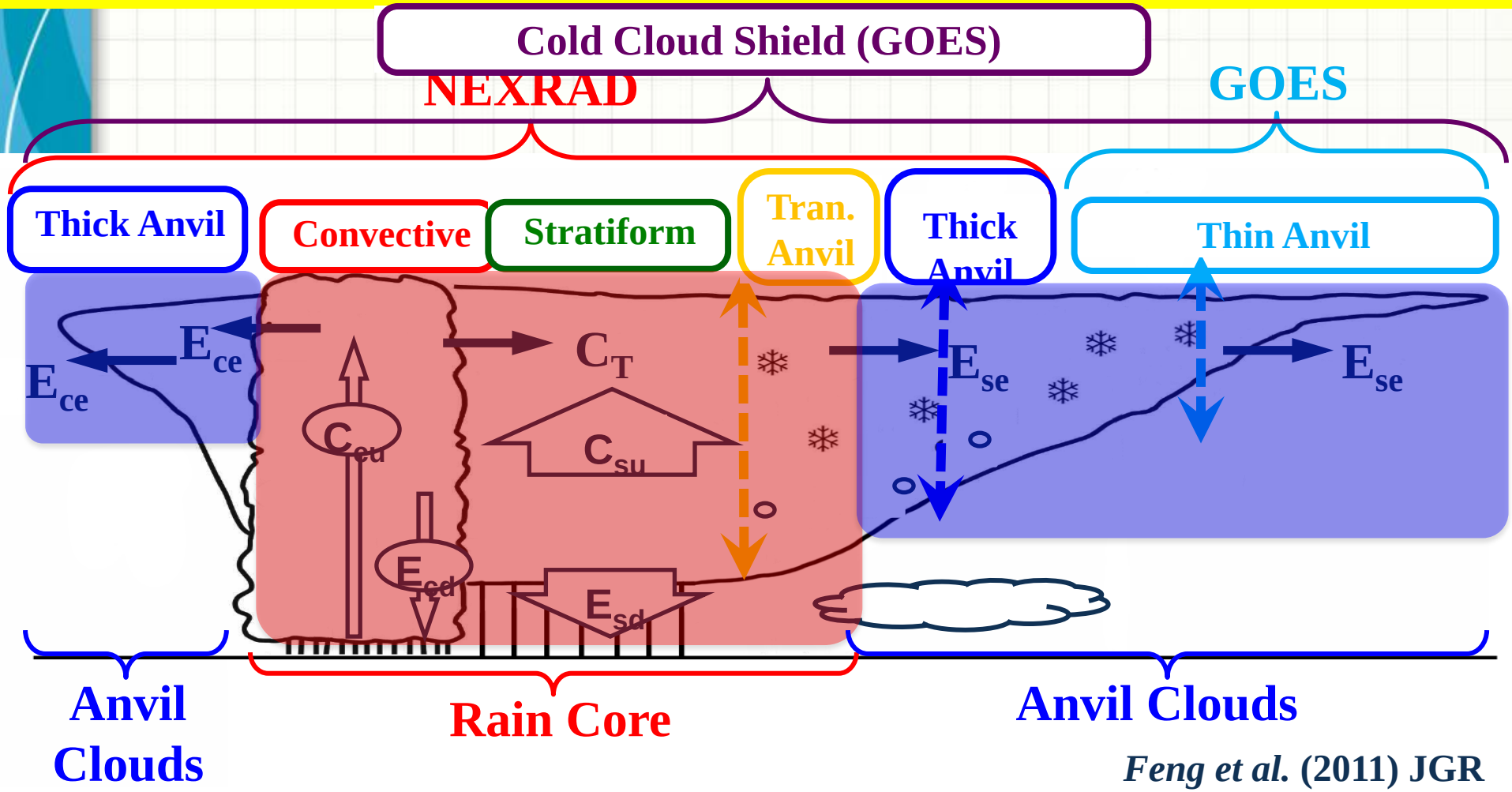
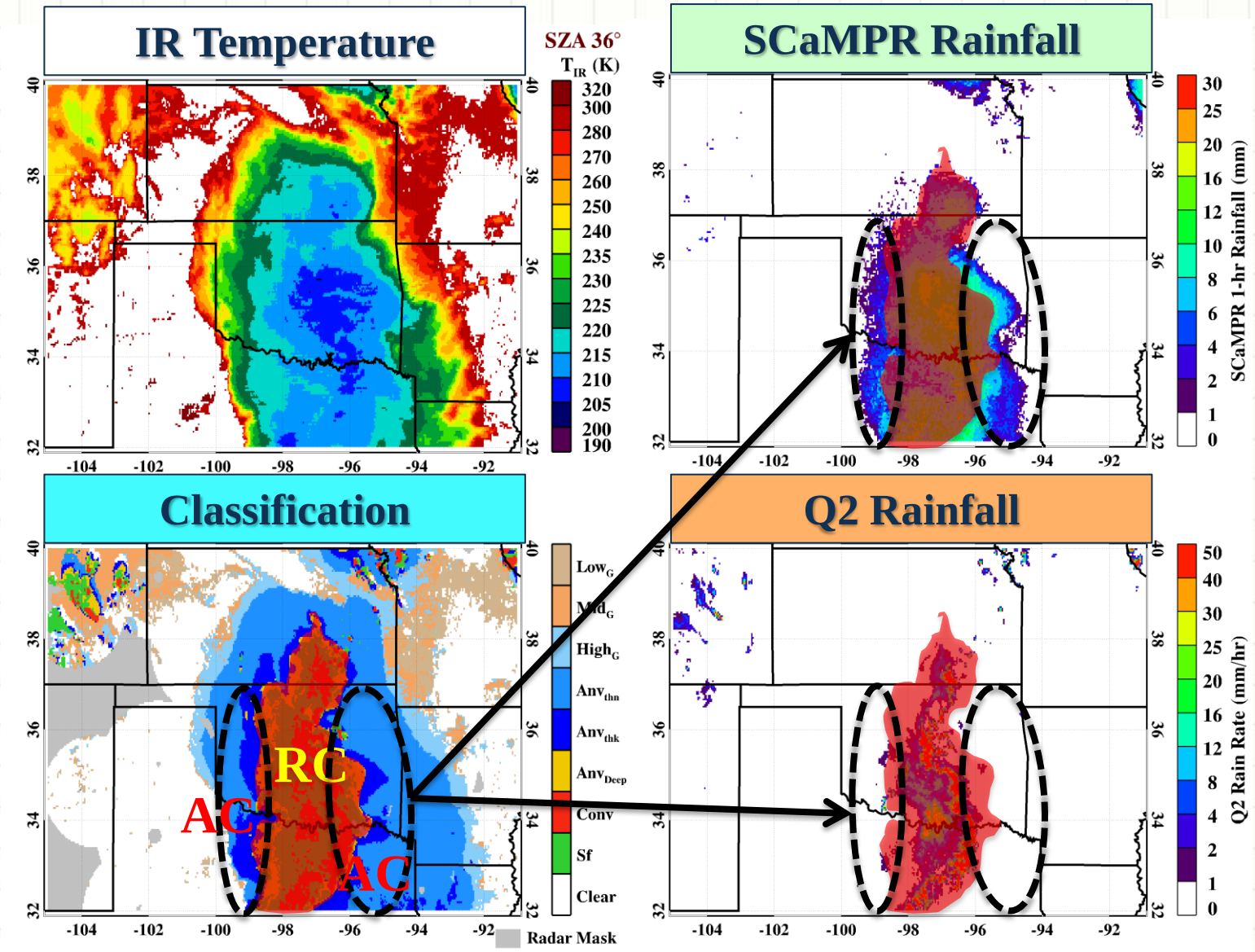


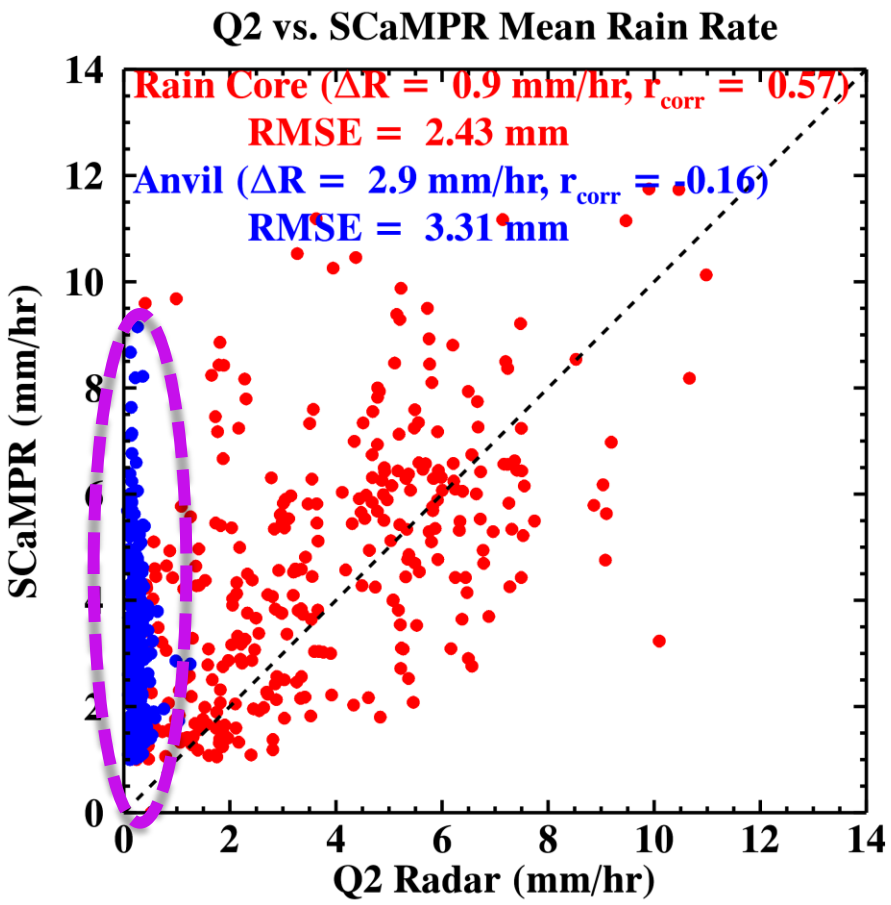
Feng et al. (2011) JGR

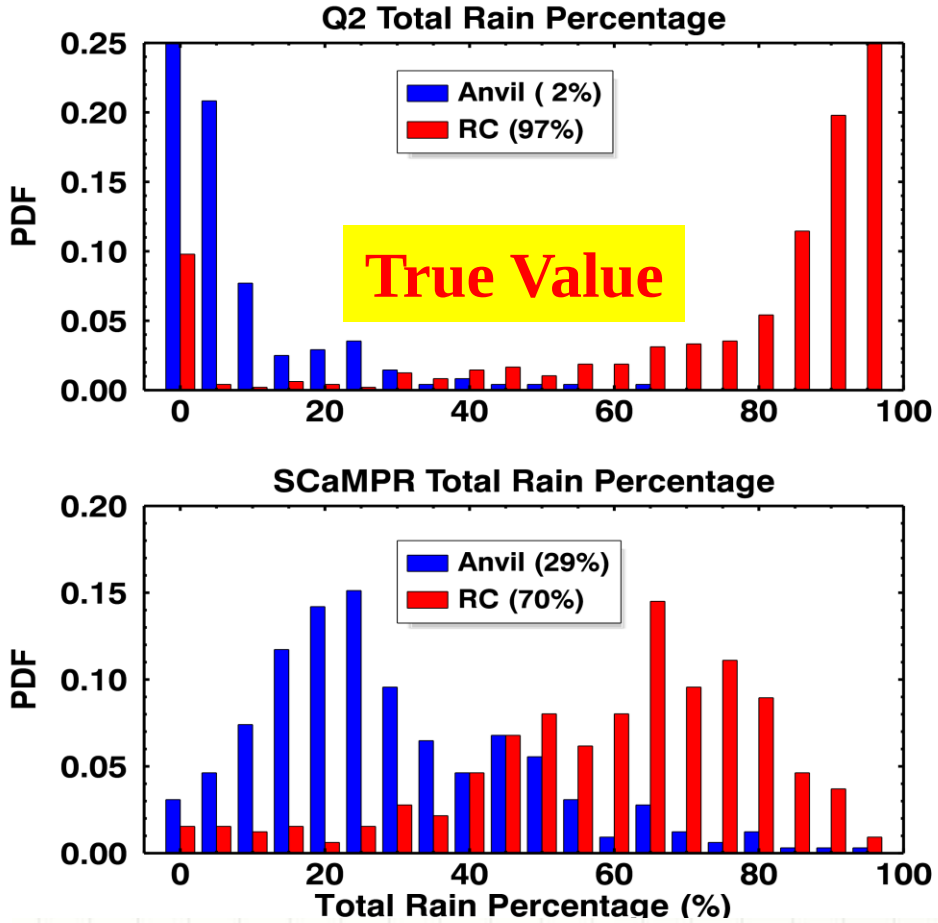
Classify Rainfall from DCS Components



What are the % of rainfall from rain core and anvils in SCaMPR and Q2?

Rainfall Comparison



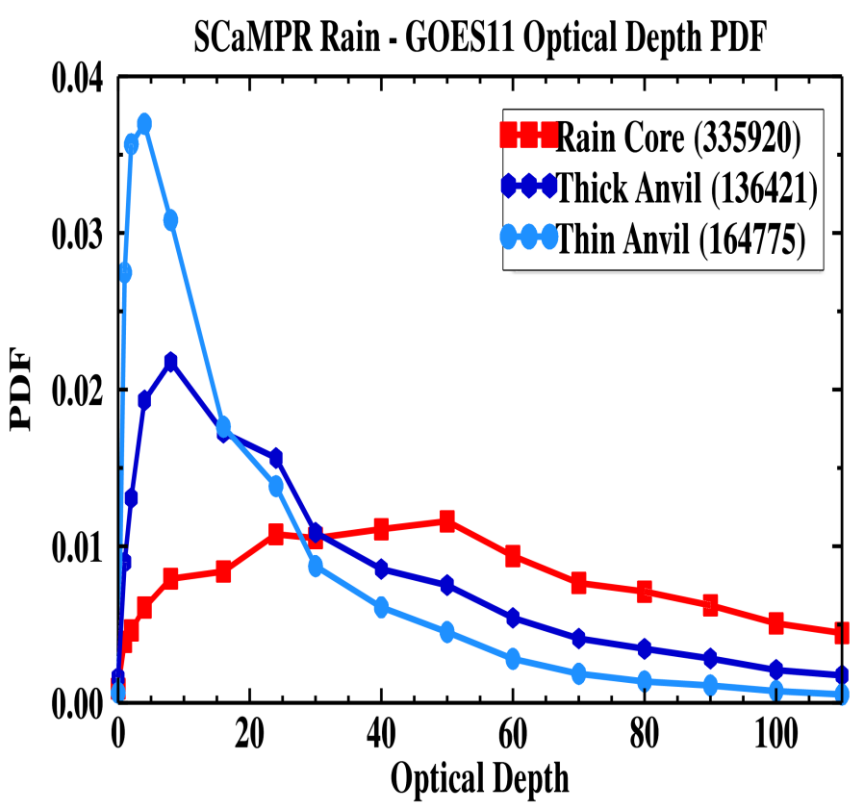


Rainfall in anvil: SCaMPR (29%) vs. Q2 (2%)

Rainfall in rain core: SCaMPR (70%) vs. Q2 (97%)

Overall: SCaMPR overestimated precipitation compared to Q2, in particular over Anvil region .

How to Improve SCaMPR Precipitation?



- **Daytime optical depth shows significant difference between both types of anvil clouds and rain core**
- **Optical depths in anvil region may be used to improve the SCaMPR precipitation retrieval (filter out non raining areas)**

Step 1:

Improving SCaMPR method by distinguishing anvil clouds from rain cores using more available channels (MODIS proxy data), Radar, and Aircraft data during MC^{3}E experiment over ARM SGP (15 convective+anvil cases during Apr-June 2011)

Step 2:

Extending the modified SCaMPR method to continental USA and comparing with NEXRAD Q2 precipitation product. (For more details, See Zhe Feng's poster)